

the subject interesting if they were once properly introduced to it, and who already have an interest in their pupils and a strong desire to answer their persistent inquiries about natural objects. Consideration for the pupils, unaccompanied by personal interest in the subject, can never achieve the best results. The possession of this qualification may, however, lead to active and conscientious preparation for such teaching, and personal interest in the subject almost surely follows. If a teacher possesses neither of these qualifications, I state without hesitation, that he has no right to be teaching in the public schools, and the children who come to him for training and instruction are most unfortunate. Teachers possessing both or either of the qualifications mentioned, have a right to be teaching. The normal development of the children under their care may not have been promoted to the fullest extent, but it cannot have been seriously hindered. It is for the thoughtful consideration of this section of the teaching body that I am offering these suggestions.

As a third essential to success, my own experience would lead me to place some intelligent and helpful instruction in Nature Study methods, or, in other words, some training in observation. What sort of observational power the children of our villages and towns would possess on reaching maturity, if it were untouched by the dulling influences of our educational system, I cannot state; but from my own experience, and from observation of the average college student—and the latter class ought to represent the best product of the public school—I have come to believe that in the majority of cases this power has been seriously injured by the educational process. Inasmuch as the higher education of the province is largely a continuation of the lower, teaching methods are not widely different, and the majority recede farther and farther from a readiness to accept the evidence of their senses as their course progresses, and become more and more dependent on authority. Doubtless it is due to improper use of books. Reform is gradually coming, however, in high school and college teaching from the increasing demand for instruction in science, and the improvement in laboratory equipment.

Geology is essentially an observational science, and yet the earth's crust was a closed book to me for much too long a time after entering upon its study. Its truths lay all around me during my college course, but they did not reach the eye or brain as such. If the personal touch of a master had not restored the vision, supplied the initial enlightenment, I doubt if those truths would ever have been revealed. With the kindred natural sciences I was more fortunate, and in this respect owe a great debt to one well known to all normal school students, Prof. H. W. Smith.

Training in observation does not necessarily demand personal contact with a skilled observer, but all the testimony available indicates that such contact produces the most rapid and satisfactory pro-

gress. In the April number of the *Popular Science Monthly* is a short paper on "The Making of Biologists" that is most interesting and suggestive in this connection. The personal statement of four great naturalists concur in ascribing their success to a natural aptitude, stimulated by contact with trained and enthusiastic observers.

For securing this third qualification the majority of the teachers of the province have probably lacked adequate opportunities. To as many as have attended the Provincial Normal School, such opportunity has been offered, but even with these immaturity or an unnatural distaste, created by preceding unwise teaching, may have rendered a large number incapable of benefiting materially thereby. Seemingly trifling facts may, however, supply this need at any time, and open the way for the laborious but satisfactory attainment of observational power.

In the fourth place in my enumeration I would put a few good books of reference. A reader of the article above mentioned will observe that books also held a large place among the influences favorable to the attainment of the naturalists there referred to. Dr. A. R. Wallace, the contemporaneous but independent discoverer with Charles Darwin of the principle of natural selection, came into possession of his first book about natural objects at the age of fifteen, which "kept him at work for a year or two determining the flowers it described." Dr. A. S. Packard at about that age had "devoured all the books on natural science in the library of Bowdoin College," but he says "the love of flowers, animals and natural scenery was inborn in me—as early as I can remember I had a flower garden of my own—and when about fourteen or fifteen I began to collect minerals, and then shells, etc." Both these quotations illustrate the proper use of books, as well as affirm their importance to progress in natural science.

Our common school teachers cannot be expected to embody all needed knowledge, even for Neighborhood Study, and good, reliable, descriptive books of reference are as essential to personal improvement as to good teaching. The value of such books to the pupils in the school can scarcely be underestimated. It is not beyond the range of the possibilities of the smallest school section in our land to produce an intellect that with the opportunity already indicated might discover its power, and reach world-wide renown. Books on natural history are then necessary for successfully teaching the prescribed work under discussion.

As a fifth and last important qualification, I would place confidence in the wisdom of those who framed the common school course of study. Any feeling that the Nature Study prescription is unjustifiable permits of a shirking of the work, and of suitable preparation for it, that is fatal to successful teaching. On the other hand such confidence begets a responsibility for its introduction, that must lead to preparation for it. How many teachers at present have prepared as diligently for